DOCUMENT RESUME

ED 329 242 IR 014 901

AUTHOR Archer, Philip; Gittman, Betty
TITLE The Needs of School Districts for Educational Computer Services.
PUB DATE Nov 88
NOTE 34p.; Paper presented at the Northeastern Educational Research Association Conference (November 1988). Extremely small print in data tables may not reproduce clearly.
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Ancillary School Services; *Computer Assisted Instruction; *Data Processing; *Educational Administration; Elementary Secondary Education; Long Range Planning; Microcomputers; *Needs Assessment; Prediction; *School Districts; School District Spending; Tables (Data)
IDENTIFIERS *Boards of Cooperative Educational Services; New York

ABSTRACT

This study investigated the current and projected needs of 42 school districts in Nassau County, New York, for data processing and educational computer services, current sources of computer services, needed improvements in services, and long-range needs. Analysis of districts' needs for computer services found that the majority of districts needed administrative/management services, pupil personnel services, and instructional services. School districts subscribed to Nassau BOCES (Board of Cooperative Educational Services) for most of their data processing and educational computer service needs; the next most usual approach of obtaining services was through the use of in-house microcomputers. Recommendations for improvement reflected districts' goals for dependable, customized, cost-effective services responsive to their unique needs, timely service and repairs, and well-trained staffs. Long-range needs of districts stressed district-level coordination, and continued support and availability of systems, software updates, and installations. (Author)

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The Needs of School Districts for Educational Computer Services

Philip Archer and Betty Gittman

Office of Institutional Research and Evaluation

Board of Cooperative Educational Services of Nassau County

Salisbury Center

Westbury, New York 11590

Presented at Northeastern Educational Research Association

November 1988

IR014901

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Abstract

This study investigated the current and projected needs of 42 school districts in Nassau County, New York, for data processing and educational computer services, current sources of computer services, needed improvements in services, and long-range needs. Analysis of districts' needs for computer services found that the majority of districts needed administrative/management services, pupil personnel services, and instructional services. School districts subscribed to Nassau BOCES for most of their data processing and educational computer service needs; the next most usual approach of obtaining services was through the use of in-house microcomputers. Recommendations for improvement reflected districts' goals for dependable, customized, cost-effective services responsive to their unique needs, timely service and repairs, and well-trained staffs. Long-range needs of districts stressed district-level coordination, and continued support and availability of systems, software updates, and installations.

The Needs of School Districts for Educational Computer Services

The computer provides a powerful tool with enormous capacities for extensive and comprehensive services. The Educational Computer Center of the Division of Computer and Communications Services at the Board of Cooperative Educational Services (BOCES) of Nassau County offers school districts a comprehensive array of data processing and educational computer services reflecting the newest technologies.

Computer Services

The Nassau BOCES Educational Computer Center offers data processing and educational computer services to local school districts. Districts may subscribe to administrative/management, pupil personnel, and instructional computer services.

Data processing and educational computer services that are classified as "administrative/management" services include the following: negotiation information, on-line financial accounting, on-line payroll, on-line personnel, on-line employee attendance, capability to upload/download data to PC, PC-based financial systems, PC-based personnel systems, word processing, desktop publishing, and administrative PC networks in business offices.

Data processing and educational computer services that are classified as "pupil personnel services," include the following: census accounting, attendance accounting, grade reporting, student scheduling, test scoring, on-line pupil personnel service, and Part 200 Management System.

Data processing and educational services that are classified as "instructional services," include the following: NCODE time sharing, WICAT, CIMS Science, CIMS Math, interactive video, telecommunications, desktop publishing, microcomputer support, remote preview, Guidance Information System (GIS), DISCOVER computer-based guidance system, C-LECT computer-linked exploration of careers, and computer assisted instruction: elementary, secondary, and adult levels.

Three-fourths of Nassau County districts currently subscribe to Nassau BOCES' administrative/management computer services, particularly negotiation information, on-line payroll, and on-line financial accounting. One-half of Nassau County districts subscribe to Nassau BOCES pupil personnel computer services, particularly test scoring and census accounting. Seven-tenths of Nassau County districts subscribe to Nassau BOCES instructional computer services, particularly microcomputer support, Guidance Information System (GIS), remote preview, and networking. Table 1 presents the numbers and percentages of local school districts that subscribe to Nassau BOCES various computer services.

Insert Table 1 about here

The present study was aimed at analyzing needs of local school districts for particular administrative/management, pupil personnel, and instructional data processing and educational computer services. Such an analysis would provide direction to the Nassau BOCES Educational Computer Center in setting objectives for the following year. The study addressed the following questions:

1. What levels of need (great, moderate, or none) are local school districts experiencing for various data processing and educational computer services? If the need for a service is great or moderate, do districts anticipate that satisfaction of the need will be a district objective in 89/90 or later?
2. How are local school districts currently providing data processing and educational computer services?
3. What improvements would provide better data processing and educational computer services for districts?
4. What are districts' long-range needs?

Method

Sample:

Nassau County is a large suburban area bordering New York City containing 56 school districts. There are approximately 175,000 students in the public schools of Nassau County. Nassau BOCES is a intermediate educational agency serving these school districts and is the largest BOCES in the state.

During the week of March 21, 1988, a questionnaire packet was mailed to the superintendent of each of 56 school districts in Nassau County, New York. Each packet included three forms, one form designed for a key administrator in administrative/management services, pupil personnel services, and instructional services, respectively.

Of the total 168 questionnaires which were distributed to the 56 districts, 117 were returned from a total of 42 districts, a response rate of 69%. Respondents included 40 educational administrators in administrative/management positions, 38 administrators in pupil personnel positions, and 39 administrators in instructional services. Table 2 lists districts that returned questionnaires from key administrators in each of the service areas.

Insert Table 2 about here

Questionnaires

Three questionnaire forms provided the data base for the present study. Each form was designed specifically for district staff responsible for administrative/management services, pupil personnel, and instructional services.

District staff provided information regarding current and projected needs for specific data processing and educational computer services, and they indicated current sources of services. In addition, the questionnaires elicited open-ended responses in regard to recommendations for improvements in services, preference for special capabilities, and long-range needs.

Data Analysis

Quantitative data was analyzed on an IBM PC using SPSS PC+ software and reported by presenting percentages of responses to questionnaire items. Responses to open-ended items were listed.

Results

Results of the study are reported in this section under three major headings. Each deals with one of the four questions that the study was designed to address.

Need for Services

Question 1 of the study addressed levels of need (great, moderate, or none) that local school districts were experiencing for various data processing and educational computer services. In those cases where the need for specific services was

considered to be great or moderate, the study investigated whether districts anticipated that fulfillment of the need would be a district objective in 89/90 or later.

Administrative/Management Services. Four-fifths of 34 responding districts indicated a great or moderate need for negotiation information. Three-fifths of the districts indicated a great or moderate need for on-line financial accounting and on-line payroll.

One-half of the districts indicated a great or moderate need for word processing, capability to upload/download data to PCs, and to establishing administrative PC networks in business offices.

On-line employee attendance, office automation, PC-based financial systems, on-line personnel, and desktop publishing were considered a great or moderate need by approximately two-fifths of the districts.

The most immediate needs for projections of administrative/management services were in the areas of on-line financial accounting and on-line payroll: all of the districts which indicated these services as great or moderate needs anticipated that fulfillment of the needs would be a district objective in 89/90. Negotiation information was also an important need for districts: four-fifths of the districts which indicated this area as great or moderate need anticipated that fulfillment of the need would be an objective in 89/90). Table 3 presents districts' needs for administrative/management computer services.

Insert Table 3 about here

A separate analysis determined the administrative/management computer service needs of nonsubscribing districts only; that is, districts which did not currently subscribe to Nassau BOCES data processing and educational computer services.

Approximately one-half of the non-subscribing districts indicated a great or moderate need to have word processing capability, capability to upload/download data to PCs, and to have administrative PC networks in business offices. Word processing and capability to upload/download data to PCs was considered by at least three-fifths of the respondents to be immediate objectives. Table 4 presents needs of non-subscribing districts for administrative/management computer services.

Insert Table 4 about here

Pupil Personnel Services. More than three-fifths of the responding districts indicated a great or moderate need for attendance accounting. More than one-half the districts indicated a great or moderate need for test scoring, census accounting, and Part 200 management. At least one-half of the districts which indicated these areas as great or moderate needs

anticipated their fulfillment becoming a district objective in 89/90).

Grade reporting, student scheduling, on-line student transportation, and on-line pupil personnel service were considered great or moderate needs by at least two-fifths of responding districts.

Except in the area of test scoring, which was considered by a majority of districts to be an immediate objective, between one-fifth and one-third of the districts which indicated these service areas as great or moderate needs anticipated that their fulfillment would be a district objective in 89/90. Table 5 presents districts' needs for pupil personnel computer services.

Insert Table 5 about here

Analysis of the pupil personnel computer service needs of districts which did not currently subscribe to Nassau BOCES data processing and educational computer services found that approximately one-half of the non-subscribing districts indicated a great or moderate need to have attendance accounting, and Part 200 management system. One-half of these districts considered these to be immediate objectives. Approximately one-third of non-subscribers indicated great or moderate need for student scheduling, grade reporting, and on-line transportation. Student

scheduling was considered an immediate objective by two-thirds of the non-subscribing districts; grade reporting and on-line transportation were considered immediate objectives by one-third of the non-subscribers. Table 6 presents non-subscribing districts' needs for pupil personnel computer services.

Insert Table 6 about here

Instructional Computer Services. Approximately three-fourths of responding districts indicated a great or moderate need for Guidance Information System (GIS), microcomputer support, and remote preview. Approximately one-half the districts indicated a great or moderate need for telecommunications and interactive video. Desktop publishing was indicated as a great or moderate need by two-fifths of the districts.

The most immediate need for pupil personnel computer services was in the area of Guidance Information Systems; all respondents who indicated this as a need anticipated that fulfillment of this need would be a district objective in 88/89.

Microcomputer support was considered an immediate need by three-fifths of the districts which indicated the need for support. Approximately one-half of the districts which indicated needs for remote preview and telecommunications anticipated that fulfillment of these needs would be a district objective in

89/90. Desktop publishing was considered an immediate need by virtually all the districts which indicated that this service was necessary. Table 7 presents districts' needs for instructional computer services.

Insert Table 7 about here

An analysis of instructional computer service needs of districts which did not currently subscribe to Nassau BOCES data processing and educational computer services found that approximately one-half of non-subscribing districts indicated a great or moderate need to have telecommunications capability and interactive video. Desktop publishing and DISCOVER Computer-Based Guidance System were considered to be great or moderate needs by at least one-third of the non-subscribing respondents.

Telecommunications was considered an immediate need by one-half of the non-subscribing districts which indicated the need for this service. Approximately one-third of the non-subscribing districts which indicated the need for interactive video anticipated that fulfillment of this need would be a district objective in 89/90. Desktop publishing was considered an immediate need by virtually all the non-subscribing districts Table 8 presents needs of non-subscribing districts for administrative/management computer services.

Insert Table 8 about here

Microcomputer support services offered by the Nassau BOCES Educational Computer Center presently consist of eight subservices. An analysis of specific microcomputer support service needs of districts found that all the support services were considered to be great or moderate needs by no fewer than three-fifths and as many as nine-tenths of the local school districts. The microcomputer support services, listed in order of their importance to districts, were as follow:

- Software cooperative bid
- High volume discount on hardware purchases
- Participation in the micro-advisory group
- Supplies cooperative bid
- A preview lending library
- Computer workshops
- Use of networked instructional computer labs
- Staff development workshops
- A complete set of instructional software

Table 9 presents districts' needs for microcomputer support services.

Insert Table 9 about here

Sources of services

Question 2 of the study addressed the question of how local school districts are currently providing data processing and educational computer services.

Administrative/Management Services. More than one-half of the districts subscribed to Nassau BOCES Educational Computer Center for the administrative/management services of negotiation information, on-line financial accounting, and on-line payroll.

In-house microcomputers were used for word processing by seven-tenths of the districts. One-third of the districts used in-house microcomputers for on-line personnel. One-fifth of the districts used in-house microcomputers for on-line employee attendance and negotiation information.

In-house mainframes were used by approximately one-third of the districts for on-line payroll, on-line financial accounting, on-line personnel, and on-line employee attendance.

Local school districts did not subscribe to outside services (other than Nassau BOCES) for data processing and educational computer services.

Approximately one-third of the districts did not utilize computers for on-line employee attendance or for on-line

personnel. One-eighth of the districts did not have word processing capabilities.

Table 10 presents school districts' sources for administrative/management data processing and educational computer services.

Insert Table 10 about here

Pupil Personnel Services. One-half of the districts subscribed to Nassau BOCES Educational Computer Center for census accounting. One-third of the districts subscribed to Nassau BOCES Educational Computer Center for attendance accounting and test scoring.

In-house microcomputers were used by approximately one-third of the districts for student scheduling, grade reporting, on-line student transportation, and Part 200 Management System; and by approximately one-fifth of the districts for attendance accounting, on-line pupil personnel service, test scoring, and census accounting.

In-house mainframes were used by approximately one-third of the districts for attendance accounting, grade reporting, and student scheduling, and by one-fifth of the districts for on-line pupil personnel service and census accounting.

One-third of the local school districts subscribed to services other than Nassau BOCES for test scoring.

Approximately one-half of the districts did not utilize computers for on-line student transportation, on-line pupil personnel service, or Part 200 Management System. One-fourth of local districts did not utilize computers for grade reporting. One-fifth did not use computers for student scheduling.

Table 11 presents school districts' sources for pupil personnel data processing and educational computer services.

Insert Table 11 about here

Instructional Computer Services. More than three-fifths of the districts subscribed to Nassau BOCES Educational Computer Center for Guidance Information System (GIS) and for microcomputer support. One-half of the districts subscribed to Nassau BOCES Educational Computer Center for remote preview. One-fifth of the districts subscribed to Nassau BOCES for computer assisted instruction at the secondary level.

In-house microcomputers were used by approximately three-fourths of the districts for computer assisted instruction on the elementary level and by more than one-half of the districts for computer assisted instruction on the secondary level. One-fourth of the districts used in-house microcomputers for computer assisted instruction on the secondary level.

In-house mainframes were virtually unused by the districts for instructional computer services. Nor did the local school districts subscribe to services other than Nassau BOCES for instructional services.

Districts did not utilize computers for CIMS Science 7-9 (which in any case is unavailable). Nine-tenths of the local districts did not use computers for WICAT, C-LECT, CIMS Science K-6 and CIMS MAth K-6. Nearly three-fourths of the districts did not use NCODE time sharing, computer assisted instruction on the adult level, or DISCOVER. One-half of the districts did not use remote preview.

Table 12 presents Nassau County school districts' sources for instructional computer services.

Insert Table 12 about here

Recommended Improvements

Question 3 of the study addressed the question of what improvements would provide better data processing and educational computer services for districts.

Respondents offered recommendations for improvements in computer services in response to an open-ended question. Specific recommendations were as follow:

- Faster response time for software preview via modem.
- More training and more frequent training for personnel.
- Availability of a payroll manual.
- Modification in formatting of the budgeting program.
- Enhanced reliability of printers.
- Faster turnaround time for payroll data, attendance accounting, and census reports.
- Increased opportunity for cooperative software and supplies bids and high volume discount hardware.
- Services for adult education registration.
- Low-cost purchase and support of PC based packages.
- Hands-on control of grading and reporting, including production of transcripts, ranking lists, and report cards.
- Flexibility in design of reports.
- Shared support services for in-district programs and systems.
- Electronic delivery of instruction to homebound students.
- Electronic training aimed at specific groups, e.g., computer coordinators, teachers, superintendents, etc.
- Additional personnel to handle technical problems in-house.

Generally, districts wanted dependable, customized, cost-effective services responsive to their unique needs. They wanted timely service and repairs. And, they wanted a well-trained staff.

In those cases where districts subscribed to outside vendors (other than Nassau BOCES) for computer services, the outside vendors offered the districts substantial control and flexibility, were responsive to districts' needs, and provided rapid turnaround time. Most outside vendors provided onsite service and repair for both hardware and software.

Long-Range Needs

Question 4 of the study investigated districts' long-range needs.

Long range needs included capabilities for downloading and uploading. Districts were interested in investigating electronic mail, teleconferencing, and computer networking. Districts wanted to explore interactive video as an educational tool. Districts wanted capability for redistricting school boundaries based on census data and continued emphasis on the Part 200 Management System. Other long-range needs related to availability of administrative programs for tracking IEPs of special education students.

Districts were aware of the need for district-level coordination of computer services and were willing to participate on a micro-advisory group. Districts were concerned about continued support of management systems and continued availability of software updates and installations.

Summary and Discussion

The primary purpose of this study was to investigate needs of local school districts for administrative/management, pupil personnel, and instructional data processing and educational computer services. The rationale was that data processing and educational computer services reflecting the newest technologies provide enormous capacities for service to districts; and polling districts directly as to their needs and recommendations in regard to computer services would facilitate provision and implementation of those services deemed necessary and desirable by the districts thereby enabling provision of services for districts while enhancing the role of an intermediate agent (in this case Nassau BOCES) in providing those services.

The results of the study confirmed the need for continuation of data processing and educational computer services which are currently offered, and provided direction to the Nassau BOCES Educational Computer Center in setting objectives for the coming year. The results were consistent with the business and marketing reports maintained by the Nassau BOCES Educational Computer Center.

Although it is difficult to make generalizations due to the localized nature of school districts included in this sample, analysis of the findings indicate some consistent patterns. For example, the need data indicate that, despite differences between

schools and school districts in Nassau County, there were some definite needs expressed for specific administrative/management services -- negotiation information, on-line financial accounting, on-line payroll, word processing, capability to upload/download to PCs and to establish PC networks in business offices; for specific pupil personnel services -- attendance accounting, test scoring, census accounting, and Part 200 Management Systems; and for specific instructional services -- Guidance Information System, microcomputer support, remote preview, telecommunications, and interactive video.

Similarly, the needs of non-subscribing districts were consistent with the needs of all districts, indicating that word processing, capability to upload/download to PCs, administrative PC networks in business offices, attendance accounting, Part 200 Management Systems, telecommunication, and interactive video were services which were needed by no fewer than a majority of non-subscribing districts.

Of particular interest was the analysis of the need for microcomputer support. All services offered within this category were considered to be needed services: software cooperative bid, high volume discount on hardware purchases, participation in the micro-advisory group, supplies cooperative bid, a preview lending library, computer workshops, networked

instructional computer labs, staff development workshops, and a complete set of instructional software.

The findings that school districts do require data processing and educational computer services in administration/management, pupil personnel, and instruction, support the importance of the role played by Nassau BOCES as provider of services to districts. In fact, the majority of Nassau County school districts subscribe to Nassau BOCES Educational Computer Center for various computer services including, most notably, negotiation information, on-line financial accounting, on-line payroll, census accounting, Guidance Information System, microcomputer support, and remote preview.

Of particular interest was the preponderance of use of in-house microcomputers for word-processing capability and also for computer assisted instruction at both the elementary and secondary levels. Also of interest was the preponderance of use of in-house microcomputers and of outside vendors for test scoring.

The majority of districts currently do not use computers for student transportation, for on-line personnel, and for Part 200 Management System.

Districts' recommendations for improved computer services reflected their goals for dependable, customized, cost-effective services responsive to unique needs, timely service and repairs, and well-trained staffs.

Outside vendors (other than Nassau BOCES) were used in those cases where vendors were perceived as offering control, flexibility, responsiveness, and rapid turnaround time.

Long-term needs reflected districts' interests in special capabilities, awareness of the need for district-level coordination and concern about continued support of management systems and availability of software updates and installations.

Taken together, the findings support the viability for centralized provision of data processing and educational computer services to local school districts. The findings suggest that districts have definite priorities in their needs for data processing and educational computer services, and that districts will subscribe to services and vendors which satisfy their priorities.

Because the findings as presented in this study can be viewed only as indications of possible trends, they point to the need to conduct further analyses of school district needs for computer services, utilization of sources for services, recommended improvements, and long-range needs. Also, because the number of districts included in the study is small and limited to a particular geographic area, the external validity of the results is limited. Thus, while trends appear to be identified, further research pursuing a broader range of districts over a wider geographic area is needed in order to test generalizability.

Recognizing the problems with making generalizations from a single study, the results of this study suggest the viability of providing data processing and educational computer services to local school districts through intermediate providers. In addition, the results suggest that local school districts can maintain active partnership with providers of computer services by identifying and implementing innovative technological services within their schools.

Table 1

DISTRICTS SUBSCRIBING TO BOCES SERVICES

Services	n	Percentage
Administrative/Management		
Negotiation information	42	75%
On-line payroll	39	70
On-line financial accounting	38	68
On-line employee attendance	8	14
On-line personnel	7	13
Word processing	5	9
Pupil Personnel		
Test scoring	30	54
Census accounting	26	46
Grade reporting	7	13
Student scheduling	6	11
On-line pupil personnel service	5	9
On-line student transportation	4	7
Part 200 management system	3	5
Instructional Computer Services		
Microcomputer support	38	68
Guidance information system (GIS)	37	66
Remote preview	21	38
Networking	18	32
CIMS science	7	13
CIMS math	6	11
NCODE time-sharing	5	9
DISCOVER computer-based guidance system	5	9
Computer assisted instruction	4	7
WICAT	1	2
C-LECT	1	2

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Table 2
LIST OF DISTRICTS RESPONDING

		Administration	Pupil Personnel	Instructional
1	BALDWIN	X	X	X
2	BELLMORE	X	X	X
3	BELLMORE-MERRICK CHSD	X	X	X
4	BETHPAGE	X		
5	CARLE PLACE			
6	EAST MEADOW	X	X	X
7	EAST ROCKAWAY	X	X	X
8	EAST WILLISTON	X	X	X
9	ELMONT	X	X	X
10	FARMINGDALE			
11	FLORAL PARK-BELLROSE			
12	FRANKLIN SQUARE	X	X	X
13	FREEPORT	X	X	X
14	GARDEN CITY	X	X	X
15	GLEN COVE CITY	X	X	X
16	GREAT NECK	X	X	X
17	HEMPSTEAD	X	X	X
18	HERRICKS			
19	HEWLETT-WOODMERE	X		X
20	HICKSVILLE	X	X	X
21	ISLAND PARK	X	X	X
22	ISLAND TREES	X	X	X
23	JERICHO			
24	LAWRENCE	X	X	X
25	LEVITTOWN			
26	LOCUST VALLEY			
27	LONG BEACH CITY	X	X	X
28	LYNBROOK	X	X	X
29	MALVERNE	X	X	X
30	MANHASSET			X
31	MASSAPEQUA	X	X	X
32	MERRICK	X	X	X
33	MINEOLA	X	X	X
34	NEW HYDE PARK	X	X	X
35	NORTH BELLMORE	X	X	X
36	NORTH MERRICK	X	X	
37	NORTH SHORE			
38	OCEANSIDE			
39	OYSTER BAY-E.NORWICH	X	X	X
40	PLAINEDGE	X	X	X
41	PLAINVIEW-OLD BETHPAGE	X	X	X
42	PORT WASHINGTON		X	
43	ROCKVILLE CENTRE	X	X	X
44	ROOSEVELT	X	X	X
45	ROSLYN	X	X	
46	SEAFORD	X	X	X
47	SEWANHAKA CHSD			
48	SYOSSET	X	X	X
49	UNIONDALE	X	X	X
50	VALLEY STREAM CHSD	X	X	X
51	VALLEY STREAM #13			
52	VALLEY STREAM #24			
53	VALLEY STREAM #30			
54	WANTAGH	X	X	X
55	WESTBURY	X		X
56	WEST HEMPSTEAD			
TOTAL		40	38	39

Table 3

FIVE-YEAR PROJECTION OF NEEDS

ADMINISTRATIVE MANAGEMENT SERVICES

(ALL RESPONDING DISTRICTS)

		Percentage*				
	n	Great Need	Moderate Need	No Need	If need is great or moderate: By 1989/90	Later
Negotiation information	34	41	47	12	82	18
On-line Financial accounting	34	53	6	41	100	
On-line payroll	34	53	9	38	100	
On-line personnel	31	16	26	58	62	38
On-line employee attendance	33	21	18	60	62	38
Capability to upload/ download data to PC	35	23	28	49	64	36
Administrative PC networks in business offices	34	21	35	44	40	60
PC-based financial systems	32	16	34	50	40	60
PC-based personnel systems	32	16	28	56	55	45
Word processing	34	29	21	50	75	25
Desktop publishing	33	9	30	61	43	57
Office Automation	33	18	27	55	43	57

*Due to rounding, percentages may not toal 100%.

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Table 4

FIVE-YEAR PROJECTION OF NEEDS
ADMINISTRATIVE MANAGEMENT SERVICES
(NON-SUBSCRIBING DISTRICTS)

	n	Percentage*				
		Great Need	Moderate Need	No Need	If need is great or moderate: By 1989/90	Later
Negotiation information	6	17	67	17	67	33
On-line Financial accounting	14	21	0	79	100	0
On-line payroll	13	0	15	85	0	0
On-line personnel	31	16	26	58	62	38
On-line employee attendance	30	13	20	67	57	43
Capability to upload/ download data to PC	35	23	28	49	64	36
Administrative PC networks in business offices	34	21	35	44	40	60
PC-based financial systems	32	16	34	50	40	60
PC-based personnel systems	32	16	28	56	54	46
Word processing	32	28	19	53	71	29
Desktop publishing	33	9	30	61	43	57
Office Automation	33	18	27	55	43	57

*Due to rounding, percentages may not total 100%.

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Table 5

FIVE-YEAR PROJECTION OF NEEDS

PUPIL PERSONNEL SERVICES

(ALL RESPONDING DISTRICTS)

		Percentage*				
	n	Great Need	Moderate Need	No Need	If need is great or moderate: By 1989/90	Later
Census accounting	33	24	33	42	50	40
Attendance accounting	31	39	26	36	56	44
Grade reporting	30	23	20	57	33	67
Student scheduling	30	30	7	63	60	40
Test Scoring	31	36	16	48	62	38
On-line Pupil Personnel Service	27	15	30	55	20	80
On-line Student Transportation	28	18	14	68	33	67
Part 200 Management System	25	24	28	48	50	50

*Due to rounding, percentages may not total 100%.

Table 6

FIVE-YEAR PROJECTION OF NEEDS

PUPIL PERSONNEL SERVICES

(NON-SUBSCRIBING DISTRICTS)

		Percentage*				
	n	Great Need	Moderate Need	No Need	If need is great or moderate: By 1989/90	Later
Census accounting	16	13	25	62	0	100
Attendance accounting	20	35	15	50	57	43
Grade reporting	27	19	19	63	33	67
Student scheduling	27	22	7	70	60	40
Test Scoring	13	15	8	77	33	67
On-line Pupil Personnel Service	25	12	32	56	20	80
On-line Student Transportation	26	15	15	69	33	67
Part 200 Management System	24	21	29	50	50	50

*Due to rounding, percentages may not total 100%.

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Table 7

FIVE-YEAR PROJECTION OF NEEDS

INSTRUCTIONAL COMPUTER SERVICES

(ALL RESPONDING DISTRICTS)

		Percentage*				
	n	Great Need	Moderate Need	No Need	If need is great or moderate: By 1989/90	Later
NCODE Time-sharing	31	7	9	84	100	0
Computer Assisted Instruction/ Elementary	33	9	30	61	50	50
Computer Assisted Instruction/ Secondary	36	8	31	61	78	22
Computer Assisted Instruction/ Adult	33	6	6	88	75	25
WICAT	31	3	7	90	67	33
Guidance Information System (GIS)	35	57	17	26	100	
DISCOVER Computer-Based Guidance System	27	8	15	67	60	40
C-LECT (Computer-linked Exploration of Careers)	29	10	10	80	25	75
CIMS Science K-6	30	7	13	80	0	100
CIMS Science 7-9	31	0	10	90	0	100
CIMS Math K-6	32	6	19	75	25	75
CIMS Math 7-9	31	0	13	87	0	100
CIMS Social Studies	31	3	13	83	50	50
CIMS Language Arts	30	3	13	83	50	50
Interactive Video	29	17	28	55	33	67
Telecommunications	32	25	31	48	50	50
Desktop publishing	31	16	26	58	92	8
Microcomputer support	37	43	41	16	78	22
Remote preview	36	28	42	30	60	40

*Due to rounding, percentages may not total 100%.

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Table 8

FIVE-YEAR PROJECTION OF NEEDS

INSTRUCTIONAL COMPUTER SERVICES

(NON-SUBSCRIBING DISTRICTS)

		Percentage*				
	n	Great Need	Moderate Need	No Need	If need is great or moderate: By 1989/90	Later
NCODE Time-sharing	27	4	7	89	100	0
Computer Assisted Instruction/ Elementary	29	7	34	59	46	54
Computer Assisted Instruction/ Secondary	32	3	28	69	75	25
Computer Assisted Instruction/ Adult	30	3	7	90	67	33
WICAT	30	0	7	93	50	50
Guidance Information System (GIS)	9	0	11	89	100	0
DISCOVER Computer-Based Guidance System	25	12	16	72	33	67
C-LECT (Computer-linked Exploration of Careers)	28	7	11	82	25	75
CIMS Science K-6	27	0	15	85	0	100
CIMS Science 7-9	29	0	10	90	0	100
CIMS Math K-6	28	0	21	79	0	100
CIMS Math 7-9	29	0	14	86	0	100
CIMS Social Studies	30	3	13	83	50	50
CIMS Language Arts	30	3	13	83	50	50
Interactive Video	29	17	28	55	33	67
Telecommunications	32	25	31	44	50	50
Desktop publishing	31	16	26	58	92	8
Microcomputer support	9	0	44	56	33	67
Remote preview	18	11	50	39	29	71

*Due to rounding, percentages may not total 100%.

Table 9

FIVE-YEAR PROJECTION OF NEEDS

MICROCOMPUTER SUPPORT SERVICES

(ALL RESPONDING DISTRICTS)

	n	Percentage* Great Need	Moderate Need	No Need	If need is great or moderate: By 1989/90	Later
A Complete Set of Instructional Software	33	12	58	30	50	50
A Preview Lending Library	36	39	47	14	93	7
Staff Development Courses	35	20	69	11	76	23
Computer Workshops	35	23	57	20	81	19
Participation in the Micro-Advisory Group	36	45	36	19	93	9
Use of BOCES Networked Instructional Computer Labs	34	21	41	38	83	17
High Volume Discount on Hardware Purchases	36	53	25	22	95	5
Software Cooperative Bid	35	60	29	11	90	10
Supplies Cooperative Bid	35	40	34	26	82	18

*Due to rounding, percentages may not total 100%.

Table 10

SOURCES FOR ADMINISTRATION/MANAGEMENT SERVICES

	Nassau BOCES Educational Computer Center	In-house Micro Computer	In-house Mini- or Mainframe Computer	Another Computer Service	No Computer Service
Negotiation Information	30	8	6	0	2
On-line Financial Accounting	24	2	13	1	2
On-line Payroll	25	1	13	0	1
On-line Personnel	3	12	10	0	12
On-line Employee Attendance	3	7	10	1	13
Word Processing	1	26	5	0	6

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Table 11

SOURCES FOR PUPIL PERSONNEL SERVICES

	Nassau BOCES Educational Computer Center	In-house Micro Computer	In-house Mini- or Mainframe Computer	Another Computer Service	No Computer Service
Census accounting	16	5	6	2	4
Attendance accounting	12	9	12	1	4
Grade reporting	5	11	12	0	10
Student scheduling	4	15	11	2	8
Test scoring	15	8	2	15	7
On-line Pupil Personnel Service	2	6	7	1	17
On-line Student Transportation	3	9	1	1	18
Part 200 Management System	3	9	4	0	16

Table 12

SOURCES FOR INSTRUCTIONAL COMPUTER SERVICES

	Nassau BOCES Educational Computer Center	In-house Micro Computer	In-house Mini- or Mainframe Computer	Another Computer Service	No Computer Service
NCODE Time-sharing	4	4	2	0	23
Computer Assisted Instruction/Elementary	4	27	2	0	4
Computer Assisted Instruction/Secondary	8	22	2	0	7
Computer Assisted Instruction/Adult	1	8	0	0	21
WICAT	1	1	0	0	24
Guidance Information System (GIS)	24	6	0	0	5
DISCOVER Computer-Based Guidance System	4	4	0	0	19
C-LECT (Computer-linked Exploration of Careers	0	2	0	0	24
CIMS Science K-6	3	0	0	0	26
CIMS Science 7-9	0	0	0	0	29
CIMS Math K-6	3	0	0	0	26
CIMS Math 7-9	0	0	0	0	29
Microcomputer Support	28	7	1	3	4
Remote Preview	18	2	0	0	18

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